

(RESEARCH ARTICLE)



## Improvement of indicators characterizing the health status of mothers. Establishment of perinatal centers throughout the Azerbaijan Republic.

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International Journal of Biological and Pharmaceutical Sciences Archive, 2023, 06(02), 082–086

Publication history: Received on 07 August 2023; revised on 06 October 2023; accepted on 09 October 2023

Article DOI: <https://doi.org/10.53771/ijbpsa.2023.6.2.0088>

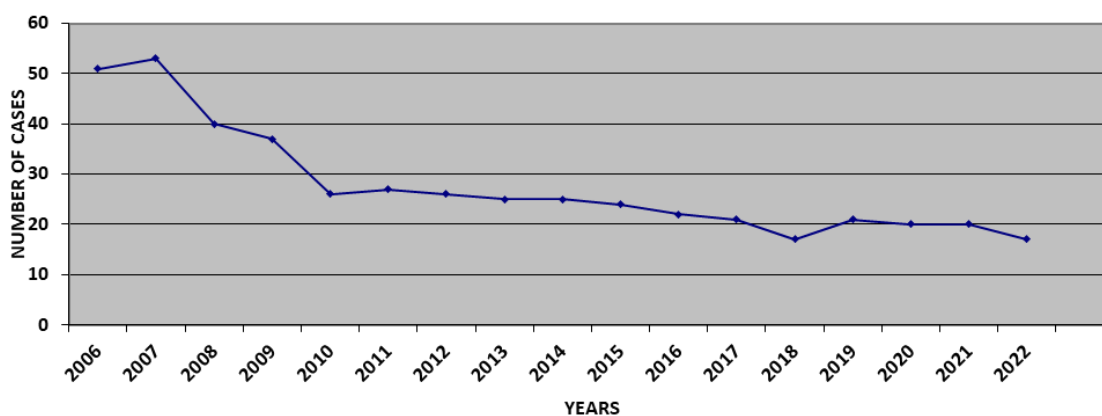
### Abstract

To improve maternity care services in the Republic, monitoring was conducted in three areas: antenatal, obstetric, and neonatal. As a result of identified monitoring deficiencies, districts were regionalized, and a three-tiered organizational structure for the maternal and child health protection system was introduced. Material and technical resources were strengthened at all service levels in line with healthcare reform, leading to improved quality of services during pregnancy, childbirth, and the postpartum period.

**Keywords:** Service Reorganization; Monitoring; Mentorship; Antenatal; Obstetric; Neonatal Care

### 1. Introduction

Around the world, indicators characterizing the health status of mothers [1,2] and infants are deliberately studied and have received significant attention in medical literature. However, issues related to maternal and child health continue to persist [1] as a global problem, gaining particular relevance in developing countries, including our Republic [1,5]. According to WHO data, over half a million women die annually worldwide due to pregnancy and childbirth-related causes [2,7,9]. In Azerbaijan, maternal mortality rates have been decreasing in recent years.



**Figure 1** Maternal Mortality in Azerbaijan

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According to WHO (World Health Organization), more than half a million women worldwide die each year due to pregnancy and childbirth-related causes [2,7,9]. In Azerbaijan, maternal mortality rates have been decreasing in recent years (Figure 1).

The reduction in these rates is the result of significant changes in the maternity care system. In 2006, Azerbaijan adopted the "State Program of Measures for Maternal and Child Health Protection" and developed a National Strategy for Reproductive Health for the years 2008-2015, based on internationally agreed-upon declarations on human rights [5,7]. The European Community's policy, as outlined in the "Health for All" program in 2005, involves continuous monitoring of reproductive health indicators [5,8]. Taking this policy into account, Azerbaijan established a national monitoring mechanism as part of the WHO program "Tool for Assessing the Quality of Inpatient Care for Mothers and Newborns" [6,10].

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## 2. Materials and Methods

The monitoring [6,8,10] was conducted by WHO experts and staff from the Institute of Obstetrics and Gynecology in Baku, Sumgait, six pilot districts with perinatal centers, and six districts in the southern region of the republic where supervision was carried out by Institute of Obstetrics and Gynecology staff. The monitoring included surveys of personnel, pregnant women, and maternity patients, as well as observation of the childbirth process [11,12,13] and care of newborns. The results were recorded in a questionnaire consisting of 82 questions, grouped by the following indicators:

- Labor and delivery [9,10]
- Refusal of routine procedures
- Infection control [7]
- Neonatal care and thermal regulation
- Prophylactic use of antibiotics [7]
- Medication use
- Organization of work - a team approach [14] Information collected for each maternity facility was analyzed, and each monitored staff member assigned scores based on the implementation of new methods, ranging from 0 to 3 points [8]. 0 – Modern approaches are not implemented at all. 1 - Requires significant improvement. 2 - Requires some improvement. 3 – Modern approaches are implemented [5,8].

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## 3. Results and Discussion

To accelerate progress towards achieving universal access to reproductive health services in the country, the Ministry of Health of the Republic of Azerbaijan has developed and approved the "Concept of Reforming Perinatal Care based on the principles." As of 2010-2014, a regionalization plan was implemented. A three-tiered structure for organizing maternal and child healthcare was introduced. All levels of maternity care services were equipped with modern material and technical resources [8]. The material and technical base at all service levels was strengthened in line with healthcare reform [1]. The quality of services provided during pregnancy, childbirth, and the postpartum period was improved [2,3]. An integrated package of prenatal, childbirth, and postpartum services for pregnant women and newborns was updated and implemented at all levels of maternal and child healthcare [2,6].

To assess the provision of services [2,3] in maternity facilities, 153 monitoring evaluations were conducted in three directions:

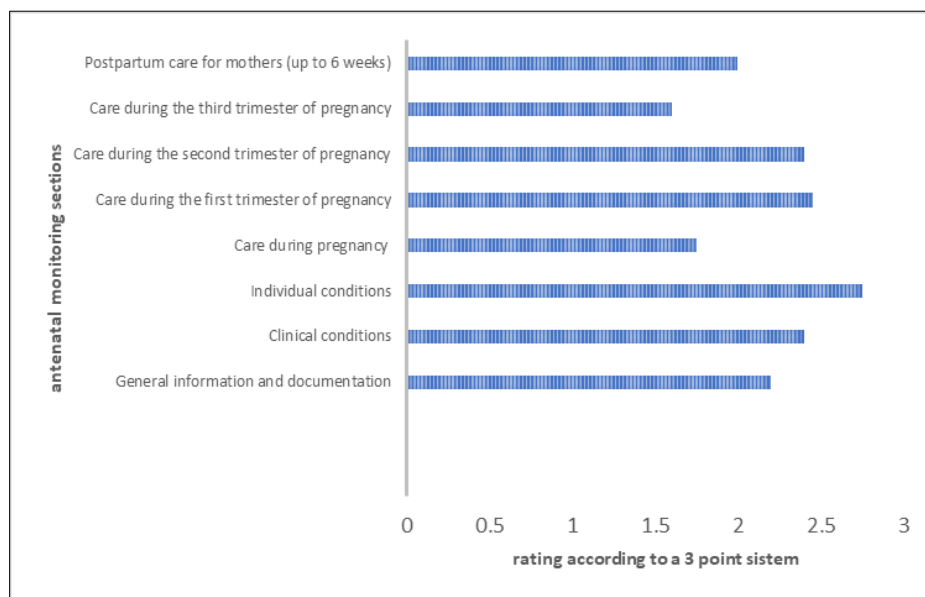
- Antenatal (53 questions)
- Obstetric (56 questions)
- Neonatal (43 questions)

The assessment of the quality of antenatal care consists of 53 questions and is presented in 9 sections:

- General information and documentation [13,14]
- Clinical conditions [11]
- Individual conditions [12,13]
- Care during pregnancy [13]
- Care during the first trimester of pregnancy [10]
- Care during the second trimester of pregnancy

- Care during the third trimester of pregnancy
- Postpartum care for mothers (up to 6 weeks) [9]
- Assessment of the newborn's condition (first examination after discharge home) [13]

In turn, these sections consist of several items. Each item is evaluated on a 3-point scale (Figure 2).



**Figure 2** The results of antenatal monitoring

In summarizing the results of antenatal monitoring in the city of Ganja, the following conclusions can be drawn: clinical conditions as well as documentation management require significant improvement.

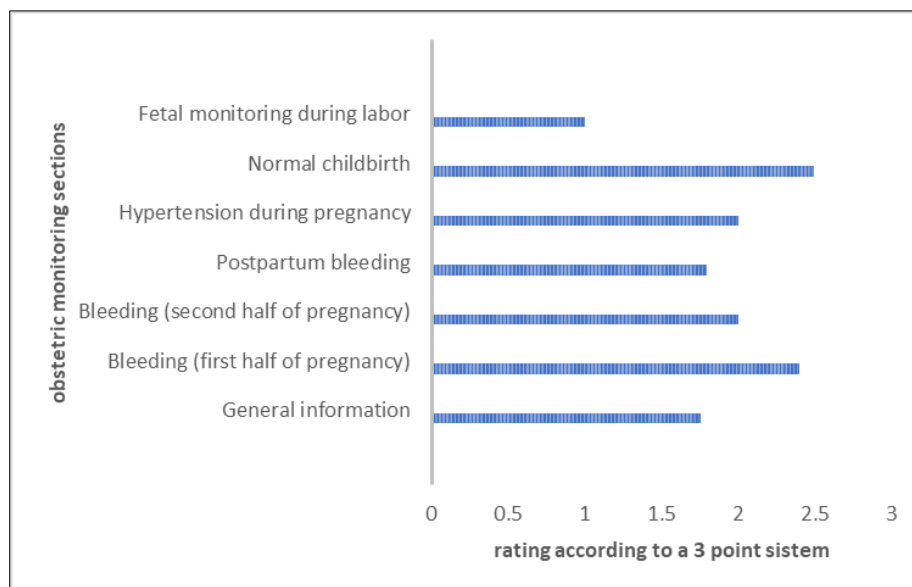
The assessment of the quality of obstetric care consists of 56 questions and is presented in 7 sections:

- General information [8]
- Bleeding (first half of pregnancy) [7]
- Bleeding (second half of pregnancy)
- Postpartum bleeding
- Hypertension during pregnancy/Eclampsia/HELLP [2]
- Normal childbirth
- Fetal monitoring during labor

During obstetric monitoring, deficiencies were identified in fetal observation during labor, as well as inadequate resources for managing postpartum hemorrhage. All of these aspects require significant improvement. When assessing the quality of obstetric care, the presence and volume of laboratory tests, as well as the availability of necessary drugs and medical equipment, are taken into account.

After monitoring, work is carried out with data from these regions to identify deficiencies in the monitoring sections. Training sessions are conducted, and doctors [4], nurses, and midwives are called to their workplaces. Maternity facilities in the districts are provided with educational modules. In order to provide highly qualified medical assistance, teams of doctors from our institute visit the regions of the republic, and consultations are regularly held [3,4] with district supervisors regarding seriously ill patients.

Currently, the developed national monitoring mechanism, conducted within the framework of the WHO program, has become a key element in the creation of perinatal centers in Azerbaijan.



**Figure 3** The results of obstetric monitoring

#### 4. Conclusion

Regular monitoring and evaluation of the activity of perinatal centers is very important for protecting the health of mothers and children. The research has shown that the provision of perinatal centers with equipment that meets modern requirements is one of the most important issues for high-quality medical care. In order to improve the quality of perinatal services in medical institutions, the involvement of medical specialists in practice programs can lead to positive progress in indicators characterizing maternal and child health.

#### Compliance with ethical standards

##### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

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